

REMARKS

The Office Action mailed December 21, 2004 has been reviewed and carefully considered. Claims 1-15 remain pending, of which the independent claims remain 1-3. Reconsideration of the above-identified application in view of the following remarks is respectfully requested.

Claims 1-3 stand rejected under 35 U.S.C. 102(e) as anticipated by U.S. Patent No. 6,341,040 to Tai et al. ("Tai").

As set forth in the analysis below, the current Office Action, mailed December 21, 2004, tries to expand the holding of *St. Regis Paper Co. v. Bemis Co.* with a supplementary suggestion of non-obviousness. However, the Office Action backs up its suggestion of non-obviousness with no citation to any authority or reference whatsoever.

Claim 3 recites:

demultiplexing, by said demultiplexer, said interleaved optical signals received from the respective said predetermined channel into a prescribed number of channels; multiplexing, by said multiplexer, said demultiplexed optical signals received from the respective said prescribed channel of said demultiplexer; deinterleaving said multiplexed optical signals into one transmission channel to be forwarded to a next node; and, providing the interleaver with an output terminal without forward connection

The Tai reference fails to disclose or suggest the above-quoted feature of

claim 3.

For example, although Tai FIG. 8 discloses an interleaver 800 with output terminals without forward connection, FIG. 8 fails to show a multiplexer or demultiplexer. On the other hand, Tai FIG. 10 shows a multiplexer and demultiplexer, but fails to show “an output terminal without forward connection” which language explicitly appears in present claim 3.

This latter-quoted limitation of claim 3, and others, the Examiner acknowledges are not disclosed or suggest in Tai.

The Examiner suggests, however, that, based on *St. Regis v. Bemis*, adding additional, unused terminals to a Tai embodiment would have been obvious.

The previous Office Action, mailed June 17, 2004, does not specify how Tai is to be modified.

Presumably, the Examiner is in the position of suggesting that Tai FIG. 8 be implemented for multiplexing/demultiplexing according to Tai FIG. 10, and that, additionally, one of the demuxes 1035, and possibly the mux 1045, be eliminated, while leaving the respective output terminal from interleaver 1020.

Problematically, however, eliminating parts of an embodiment while retaining the functionality is non-obvious.

Note that the omission of an element and retention of its function is an indicia of unobviousness. *In re Edge*, 359 F.2d 896, 149 USPQ 556 (CCPA 1966).

MPEP 2144.04(2)(B).

To avoid this reality, the Examiner characterizes the difference of the present invention over the prior art as amounting to “mere duplication of the essential working parts.” It is assumed, therefore, that the Examiner is starting with a smaller Tai embodiment, and attempting to use “mere” duplication to achieve an embodiment resembling the present invention.

At best, however, the Examiner envisions selective duplication coupled with selective omission, and whatever else is needed to deliver a working embodiment. Motivation for these modifications, and the modifications themselves, are not to be found in what was generally known to those of ordinary skill in the art. Instead, the modifications, and motivation for such, arise straight from the present applicants’ disclosure.

Tai discloses a number of alternative configurations of an optical system that demultiplexes optical signals to optical devices and multiplexes optical signals from the devices, those multiplexers and demultiplexers being sandwiched between respective interleavers and de-interleavers.

One configuration (FIG. 10) for a Tai interleaver 1020 interleaves an incoming optical signal onto two optical fibers 550, 597, each of the fibers then feeding a respective demultiplexer 1030, 1035. Although FIG. 10 depicts the interleaver 1020 as

having merely two filters 530, 580, which constitute a single stage of interleaving, Tai states that, alternatively, the interleaver 1020 may be configured with multiple stages of interleaving (col. 6, lines 56-64). Thus, for example, the package 557 housing the interleaver 1020 could be designed to instead contain the three filter pairs 810, 820, 830, thereby affording two stages of interleaving.

It can only be assumed, based on Tai, that both of the Tai output fibers 550, 597 are necessarily connected to their respective demultiplexers 1030, 1035, because, otherwise, half of the input signal channels, e.g., the odd channels, would be discarded.

Likewise, with two stages of de-interleaving, all of the output fibers 840, 850, 860, 870 must be connected to respective demultiplexers. Otherwise, input information would be discarded.

According to the above two paragraphs, even if one were to arrive at the notion of adding an unused terminal to Tai, it is unclear how one would implement Tai, as modified, into a working embodiment.

Item 2 of the June 17th Office Action speculates that the invention as recited in claim 3 amounts to “mere duplication of the essential working parts of a device,” but, as demonstrated above, one cannot merely duplicate the essential working parts of Tai to arrive at the present invention.

The Response to Arguments section of the current, December 21st Office

Action repeatedly demonstrates the futility of the Examiner's position.

First, the Examiner states, "As stated in the office action and supported by *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8, the examiner believes that one skilled in the art would clearly have recognized that it would have been beneficial and obvious to include an extra output terminal, demultiplexer, and multiplexer, with these elements being reserved for future expansion of the system."

Although the Examiner states "with these elements being reserved for future expansion of the system," the Examiner apparently means "with these elements selectively being reserved for future expansion of the system." In particular, the Examiner apparently implies that the interleaver output terminal is connected now while the multiplexer and demultiplexer are reserved for future expansion. This selective implementation amounts to more than mere duplication of essential working parts.

The Examiner next states, "The examiner maintains that it is well known in the art to include reserve elements in an optical communication system for future expansion."

This statement by the Examiner seems to be somewhat shy of Official Notice. It is not clear what is meant by "include reserve elements in an optical system," but the applicants would traverse any proper Official Notice making a similar statement. Again, any citation to a reference or other authority is completely lacking.

The Examiner then states the following:

Furthermore, St. Regis Paper Co. v. Bemis Co., 193 USPQ 8 provides that is mere duplication of the essential working parts of the invention would involve only routine skill in the art. In this case, mere duplication of the interleaver output terminals, the demultiplexers, and the input to the de-interleaver taught by the prior art would have involved only routine skill in the art. Moreover, in providing the duplication of parts for future expansion, one skilled in the art would clearly have recognized that the part should not be connected until needed, and hence delay in providing forward connection [underlining added for emphasis].

First, the purported Tai embodiment perceived by the Examiner or somehow constructed according to the Examiner's beliefs or views of obviousness presumably would feature an interleaver output terminal connected to the interleaver before the output terminal is needed. Yet, the Examiner suggests as it would have been "clearly recognized that the part should not be connected until needed." This suggestion by the Examiner therefore appears to contradict the position taken by the Examiner. The contradiction relates to the selectivity by the Examiner in picking parts, selectivity that goes beyond the mere duplication of essential working parts. Nor, as set forth above, can Tai be implemented into a working embodiment merely by the modification proposed by the Examiner. For this reason too, any modification of Tai to resemble the present invention goes beyond mere duplication of essential working parts.

For at least the above reasons, the cited reference fails to render obvious the

invention as recited in claim 3. Reconsideration and withdrawal of the rejection are respectfully requested.

Tai, by contrast, fails to disclose or suggest a system that features at least one multiplexer/demultiplexer pair, “wherein the preliminary output terminal is without forward connection” which language specifically appears in claim 1.

Claim 2 is similar to claim 1 and features the same distinguishing language.

As to the other rejected claims, each depends from one of the base claims and is deemed to be patentable at least due to its dependency. However, each defines another aspect of the invention, and warrants further consideration based upon its additional, individual merits.

In view of the foregoing amendments and remarks, it is believed that this application is now in condition for allowance. The Examiner is invited to contact the undersigned in the event of any perceived outstanding issues so that passage of the case to issue can be effected without the need for a further Office Action.


Amendment
Serial No. 09/748,430

Docket No. 5000-1-182.

In the event that any additional fee is required to continue the prosecution of this Application as requested, please charge such fee to Deposit Account No. 502-470.

Respectfully submitted,

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